



Directional Survey Certification

2948 I-70 Business Loop
Grand Junction, CO 81504
(970)-245-9447 Fax (970)-245-9454

Operator	<u>WPX Energy Rocky Mountain, LLC.</u>
Well Name & No.	<u>RU 344-7</u>
County & State	<u>Garfield County, CO</u>
SDI Job No.	<u>420315DEFK263384</u>
Rig	<u>Nabors 576</u>

I, Mel Mireles Jr., having personal knowledge of all the facts, hereby certify that the attached directional survey run from a measured depth of 0 feet to a measured depth of 9,990 feet is true and correct as determined from all available records.


Signature

06-Apr-15
Date

Mel Mireles Jr.

Grand Junction Assistant Well Planner
Scientific Drilling - Colorado District

Company:	WPX Energy Rocky Mountain, LLC	Local Co-ordinate Reference:	Well RU 344-7 - Slot B05
Project:	Garfield County, CO NAD83	TVD Reference:	KELLY BUSHING @ 7943.02ft (Nabors 576 (26' RKB) kjs)
Site:	RU 44-7 Pad	MD Reference:	KELLY BUSHING @ 7943.02ft (Nabors 576 (26' RKB) kjs)
Well:	RU 344-7	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Grand Junction District

Project	Garfield County, CO NAD83		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		

Site	RU 44-7 Pad				
Site Position:		Northing:	1,598,795.69 usft	Latitude:	39.4546828
From:	Map	Easting:	2,347,575.10 usft	Longitude:	-107.8108128
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.46 °

Well	RU 344-7 - Slot B05					
Well Position	+N/-S	0.00 ft	Northing:	1,598,845.59 usft	Latitude:	39.4548199
	+E/-W	0.00 ft	Easting:	2,347,578.30 usft	Longitude:	-107.8108060
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	7,917.02 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2/26/2015	9.78	65.64	51,862

Design	Wellbore #1				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0.00	0.00	127.30	

Survey Program	Date	4/6/2015		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
90.00	449.00	Survey #1 - Gyro MWD (Wellbore #1)	SDI Gyro MWD 104	SDI Gyro MWD Error Model Ver 1.0.4
519.00	1,255.00	Survey #2 - Surface MWD (Wellbore #1)	MWD SDI	MWD - Standard ver 1.0.1
1,351.00	9,990.00	Survey #3 - Production MWD (Wellbore #1)	MWD SDI	MWD - Standard ver 1.0.1

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
90.00	1.23	165.94	89.99	-0.94	0.23	0.75	1.37	1.37	0.00	
First SDI Gyro MWD Survey										
176.00	2.99	150.56	175.93	-3.79	1.56	3.54	2.13	2.05	-17.88	
267.00	4.22	128.32	266.75	-7.93	5.36	9.06	2.02	1.35	-24.44	
357.00	5.10	115.31	356.46	-11.69	11.57	16.29	1.52	0.98	-14.46	
449.00	5.89	109.51	448.04	-15.02	19.72	24.78	1.05	0.86	-6.30	

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Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
Last SDI Gyro MWD Survey									
519.00	4.64	119.53	517.74	-17.61	25.57	31.01	2.21	-1.79	14.31
First SDI Surface MWD Survey									
610.00	4.90	122.35	608.43	-21.51	32.05	38.53	0.38	0.29	3.10
701.00	5.55	122.88	699.05	-25.98	39.03	46.79	0.72	0.71	0.58
792.00	6.10	124.61	789.58	-31.11	46.71	56.01	0.63	0.60	1.90
883.00	5.57	114.32	880.11	-35.68	54.71	65.14	1.29	-0.58	-11.31
973.00	5.92	112.23	969.66	-39.23	62.99	73.88	0.45	0.39	-2.32
1,065.00	4.79	114.91	1,061.25	-42.64	70.86	82.21	1.26	-1.23	2.91
1,161.00	4.89	115.71	1,156.91	-46.11	78.18	90.13	0.13	0.10	0.83
1,255.00	5.47	116.65	1,250.53	-49.85	85.80	98.46	0.62	0.62	1.00
Last SDI Surface MWD Survey									
1,351.00	5.98	118.59	1,346.05	-54.30	94.28	107.90	0.57	0.53	2.02
First SDI Production MWD Survey									
1,446.00	5.80	117.27	1,440.55	-58.87	102.89	117.52	0.24	-0.19	-1.39
1,541.00	5.71	117.16	1,535.07	-63.22	111.36	126.90	0.10	-0.09	-0.12
1,636.00	5.63	113.20	1,629.60	-67.22	119.85	136.07	0.42	-0.08	-4.17
1,731.00	6.38	127.86	1,724.09	-72.29	128.30	145.87	1.79	0.79	15.43
1,827.00	6.38	124.23	1,819.49	-78.57	136.92	156.53	0.42	0.00	-3.78
1,922.00	5.88	124.61	1,913.95	-84.30	145.29	166.66	0.53	-0.53	0.40
2,017.00	5.89	120.79	2,008.45	-89.56	153.48	176.36	0.41	0.01	-4.02
2,112.00	5.63	123.21	2,102.97	-94.61	161.57	185.86	0.37	-0.27	2.55
2,208.00	5.22	121.64	2,198.54	-99.48	169.23	194.90	0.45	-0.43	-1.64
2,303.00	5.06	116.29	2,293.16	-103.60	176.66	203.31	0.53	-0.17	-5.63
2,397.00	5.98	126.20	2,386.72	-108.33	184.33	212.28	1.41	0.98	10.54
2,492.00	5.42	125.42	2,481.25	-113.85	191.98	221.71	0.60	-0.59	-0.82
2,587.00	5.68	125.29	2,575.81	-119.17	199.47	230.89	0.27	0.27	-0.14
2,682.00	5.41	125.07	2,670.36	-124.46	206.98	240.06	0.29	-0.28	-0.23
2,778.00	5.24	123.24	2,765.95	-129.46	214.35	248.96	0.25	-0.18	-1.91
2,873.00	5.17	116.84	2,860.56	-133.77	221.79	257.50	0.62	-0.07	-6.74
2,969.00	5.05	119.25	2,956.17	-137.79	229.34	265.93	0.26	-0.13	2.51
3,064.00	5.14	116.02	3,050.80	-141.70	236.81	274.25	0.32	0.09	-3.40
3,159.00	4.79	121.45	3,145.44	-145.63	244.02	282.37	0.62	-0.37	5.72
3,255.00	4.95	115.03	3,241.10	-149.48	251.19	290.40	0.59	0.17	-6.69
3,349.00	5.83	118.69	3,334.68	-153.48	259.06	299.08	1.00	0.94	3.89
3,445.00	5.96	118.67	3,430.17	-158.22	267.71	308.83	0.14	0.14	-0.02
3,541.00	5.36	117.45	3,525.71	-162.67	276.06	318.18	0.64	-0.63	-1.27
3,636.00	5.54	116.22	3,620.28	-166.75	284.11	327.05	0.23	0.19	-1.29
3,731.00	5.96	124.52	3,714.80	-171.57	292.29	336.48	0.98	0.44	8.74
3,826.00	5.61	120.52	3,809.32	-176.72	300.35	346.01	0.56	-0.37	-4.21
3,919.00	5.38	124.75	3,901.89	-181.51	307.85	354.88	0.50	-0.25	4.55
4,014.00	4.53	125.66	3,996.53	-186.24	314.56	363.08	0.90	-0.89	0.96
4,109.00	5.84	120.58	4,091.14	-190.89	321.77	371.63	1.46	1.38	-5.35

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Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,204.00	5.96	120.22	4,185.64	-195.83	330.19	381.33	0.13	0.13	-0.38
4,299.00	5.22	120.81	4,280.19	-200.52	338.16	390.52	0.78	-0.78	0.62
4,394.00	5.27	122.42	4,374.79	-205.07	345.56	399.16	0.16	0.05	1.69
4,489.00	4.92	124.04	4,469.41	-209.69	352.62	407.57	0.40	-0.37	1.71
4,584.00	4.79	124.80	4,564.07	-214.24	359.25	415.60	0.15	-0.14	0.80
4,680.00	4.40	123.75	4,659.76	-218.57	365.60	423.28	0.42	-0.41	-1.09
4,775.00	5.66	114.65	4,754.40	-222.55	372.89	431.49	1.57	1.33	-9.58
4,870.00	6.43	121.53	4,848.87	-227.29	381.68	441.35	1.11	0.81	7.24
4,966.00	6.16	117.80	4,944.29	-232.50	390.82	451.78	0.51	-0.28	-3.89
5,061.00	6.37	118.40	5,038.72	-237.38	399.96	462.02	0.23	0.22	0.63
5,157.00	6.16	119.03	5,134.15	-242.42	409.15	472.37	0.23	-0.22	0.66
5,252.00	5.93	122.84	5,228.62	-247.55	417.73	482.31	0.49	-0.24	4.01
5,348.00	5.36	124.85	5,324.16	-252.80	425.58	491.74	0.63	-0.59	2.09
5,444.00	5.30	118.58	5,419.74	-257.49	433.15	500.60	0.61	-0.06	-6.53
5,539.00	4.82	118.95	5,514.37	-261.52	440.50	508.88	0.51	-0.51	0.39
5,635.00	5.87	129.02	5,609.96	-266.56	447.84	517.78	1.46	1.09	10.49
5,731.00	5.69	125.40	5,705.47	-272.41	455.53	527.44	0.42	-0.19	-3.77
5,825.00	5.46	126.48	5,799.02	-277.77	462.93	536.57	0.27	-0.24	1.15
5,920.00	5.39	130.54	5,893.60	-283.35	469.95	545.55	0.41	-0.07	4.27
6,015.00	5.28	125.80	5,988.19	-288.81	476.89	554.37	0.48	-0.12	-4.99
6,110.00	5.10	125.80	6,082.80	-293.84	483.86	562.96	0.19	-0.19	0.00
6,206.00	4.92	131.68	6,178.43	-299.07	490.40	571.33	0.57	-0.19	6.13
6,301.00	4.66	125.80	6,273.10	-304.04	496.57	579.25	0.58	-0.27	-6.19
6,395.00	3.17	120.70	6,366.88	-307.60	501.90	585.65	1.63	-1.59	-5.43
6,490.00	2.93	121.63	6,461.74	-310.21	506.23	590.68	0.26	-0.25	0.98
6,585.00	2.65	123.92	6,556.63	-312.71	510.12	595.29	0.32	-0.29	2.41
6,681.00	2.37	105.40	6,652.54	-314.48	513.87	599.34	0.89	-0.29	-19.29
6,776.00	2.02	93.01	6,747.47	-315.09	517.44	602.55	0.62	-0.37	-13.04
6,871.00	1.34	90.55	6,842.43	-315.18	520.22	604.82	0.72	-0.72	-2.59
6,966.00	1.59	13.63	6,937.41	-313.91	521.64	605.18	1.93	0.26	-80.97
7,062.00	1.76	20.59	7,033.37	-311.24	522.47	604.23	0.28	0.18	7.25
7,157.00	1.47	30.02	7,128.33	-308.82	523.60	603.65	0.41	-0.31	9.93
7,253.00	1.36	11.71	7,224.30	-306.64	524.44	603.00	0.48	-0.11	-19.07
7,348.00	0.39	66.74	7,319.29	-305.41	524.97	602.68	1.24	-1.02	57.93
7,443.00	0.17	110.89	7,414.29	-305.33	525.40	602.97	0.31	-0.23	46.47
7,539.00	0.10	58.72	7,510.29	-305.34	525.60	603.14	0.14	-0.07	-54.34
7,634.00	0.18	97.53	7,605.29	-305.31	525.82	603.30	0.13	0.08	40.85
7,729.00	0.40	259.53	7,700.29	-305.39	525.64	603.20	0.60	0.23	170.53
7,825.00	0.67	254.58	7,796.28	-305.60	524.77	602.64	0.29	0.28	-5.16
7,921.00	0.53	234.87	7,892.28	-306.01	523.87	602.16	0.26	-0.15	-20.53
8,017.00	0.97	262.20	7,988.27	-306.37	522.70	601.46	0.58	0.46	28.47
8,112.00	0.97	282.33	8,083.25	-306.31	521.12	600.16	0.36	0.00	21.19

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8,207.00	1.23	302.19	8,178.24	-305.59	519.47	598.42	0.48	0.27	20.91	
8,302.00	1.44	305.20	8,273.21	-304.36	517.63	596.21	0.23	0.22	3.17	
8,398.00	1.01	0.79	8,369.19	-302.82	516.66	594.50	1.25	-0.45	57.91	
8,493.00	1.65	22.91	8,464.17	-300.72	517.20	593.66	0.85	0.67	23.28	
8,588.00	1.95	20.14	8,559.12	-297.95	518.29	592.84	0.33	0.32	-2.92	
8,684.00	1.85	31.75	8,655.07	-295.10	519.67	592.21	0.41	-0.10	12.09	
8,779.00	1.41	37.11	8,750.03	-292.86	521.18	592.06	0.49	-0.46	5.64	
8,874.00	1.49	41.42	8,845.00	-291.00	522.70	592.14	0.14	0.08	4.54	
8,969.00	1.38	28.17	8,939.97	-289.07	524.06	592.05	0.37	-0.12	-13.95	
9,064.00	0.77	49.30	9,034.95	-287.64	525.08	592.00	0.76	-0.64	22.24	
9,160.00	0.80	56.95	9,130.94	-286.86	526.13	592.36	0.11	0.03	7.97	
9,255.00	0.53	67.35	9,225.94	-286.33	527.10	592.81	0.31	-0.28	10.95	
9,351.00	0.97	64.18	9,321.93	-285.80	528.24	593.40	0.46	0.46	-3.30	
9,446.00	0.53	60.23	9,416.92	-285.23	529.34	593.93	0.47	-0.46	-4.16	
9,541.00	0.14	77.52	9,511.92	-284.99	529.84	594.18	0.42	-0.41	18.20	
9,636.00	1.07	228.82	9,606.91	-285.55	529.28	594.07	1.26	0.98	159.26	
9,732.00	1.72	240.02	9,702.88	-286.86	527.36	593.34	0.73	0.68	11.67	
9,827.00	2.28	260.38	9,797.83	-287.89	524.26	591.50	0.94	0.59	21.43	
9,923.00	1.93	262.03	9,893.76	-288.43	520.78	589.06	0.37	-0.36	1.72	
9,933.00	1.69	261.18	9,903.76	-288.48	520.47	588.83	2.41	-2.40	-8.50	
Last SDI Production MWD Survey										
9,990.00	1.69	261.18	9,960.73	-288.73	518.80	587.67	0.00	0.00	0.00	
Projection to TD										

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
90.00	89.99	-0.94	0.23	First SDI Gyro MWD Survey	
449.00	448.04	-15.02	19.72	Last SDI Gyro MWD Survey	

Checked By: _____ Approved By: _____ Date: _____